

REMARKS**Status of Claims**

Applicants respectfully request entry of this amendment. Upon entry of this Amendment claims 23-54 will be pending in this application. Claims 1-22 were previously canceled. Claims 23, 34, 50 and 51 are currently amended. The specification is amended in regard to formalities as requested by the Examiner. Previous FIG.'s 7-1 and 7-2 have also been amended in regard to formalities associated with the drawing identification label (FIG.'s 7A and 7B). No new matter is introduced by this Amendment.

Amendments To the Drawings

The drawing identification labels stand objected to as informal. As requested by the Examiner, Applicants have amended the specification to recite FIG. 7A and FIG. 7B instead of 7-1 and 7-2 as requested by the Examiner. A Request for Approval of Drawing Corrections is filed concurrently herewith.

Amendments to the Specification

The specification stands objected to as informal regarding the drawing identification labels FIG. 7-1 and FIG. 7-2 recitations in the specification. Accordingly, Applicants have amended the specification to reflect the new designations of FIG. 7A and FIG. 7B as set forth above.

Response to Rejections under 35 U.S.C. § 112**Claimed Temperature Range(s)**

Claims 23-54 stand rejected under 35 U.S.C. § 112 regarding the recited temperature range of “about 50°F to 1500°F” as recited in independent claims 23 and 34. Applicants respectfully traverse.

Applicants respectfully assert that the claimed reactor system functions not only under steady-state conditions, but also in transitional operations such as start-up, shut-down, excess capacity, full-rate and less than full-rate operations. The reactor can be exposed to the temperatures of the respective feeds, as well as any temperatures which result from the thermodynamics of contacting the feeds to and in the reactor and the streams exiting the reactor. Further, heats of reaction and heat transfer effects can also affect the temperature of the reactor.

Accordingly, a person having ordinary skill in the art would understand from this application that the reactor system can experience the full range of temperatures disclosed in the application and claimed by Applicants. Thus, Applicants respectfully assert that the claimed reactor “operates” at any conditions over the temperature range(s) which are disclosed in the specification.

Regarding Applicants’ claimed upper range temperature of about 1500°F, the specification discloses

hydrogen ... flows ... into a gas inlet 705I at the bottom of
the reactor 705B ... at a temperature of about 1500°F ...
(see Specification, page 24, line 25 - page 25, line 2).

Thus, support is provided for reactor operations at 1500°F. Additional support for the recitation of 1500°F include, but are not limited to:

FLUIDIZED BED REACTOR: ...

Hydrogen Mixture Gas Inlet Temperature 1500 °F
(see Specification table, on page 30, at line 29)

and originally filed claim 9 which recites “fluidizing hydrogen temperature on entering the reactor is 1500°F”.

In view of the above, the specification provides supports for Applicants’ claimed reactor “reactor having an operating temperature in a range ... to about 1500°F”.

Regarding Applicants’ claimed lower range temperature of 50°F. The specification discloses “tar sand at 50°F are reacted with hydrogen” (see Specification on page 15, line 24). Thus, the reactor can be exposed to the lower end temperature of “about 50°F” in relation to the tar sand feed. Additional disclosure of the claimed “about 50°F” value includes for example, but is not limited to:

OVER-ALL CONSIDERATIONS ...

Sand Feed Temperature	50.00 °F
Sand temperature at reactor inlet	50.00 °F

(see Specification, on page 17, lines 14-16). The specification expressly discloses the reactor’s exposure to the 50°F temperature.

In view of the above, the specification discloses support for Applicants’ claimed range of for “said reactor having an operating temperature in a range of about 50°F to 1500°F” as claimed by Applicants.

No Contained Catalyst Bed

Claims 23-54 stand rejected to under 35 U.S.C. § 112 regarding the recitation “free of a contained catalyst bed”.

Applicants respectfully assert that the claimed invention “free of a contained catalyst bed” is fully supported. Applicants respectfully note that catalyst can be added to a reactor system by a number of means and at a number of locations. One having ordinary skill in the art would understand from the disclosure that catalyst has been added to the process. This is distinguished over technologies which utilize a fixed catalyst bed contained in a fluidized bed.

Applicants disclose a tar sand or oil shale feed which is fed to the reactor, is fluidized, reacts and whose reactant products leave the reactor. This process is not impeded by the presence of a fixed/contained catalyst bed in the fluid bed as other technologies may use. The Specification does not disclose a fixed/contained catalyst bed in the fluid bed because such is not utilized in the claimed fluid bed.

Applicants respectfully refer the Examiner to a telephonic Examiner Interview which occurred on April 12, 2005 in which this matter was discussed. Consistent with the results of that interview Applicants amended the claim to include the recitation “free of a contained catalyst bed”.

Claims 50 and 51

Claims 50 and 51 stand rejected under 35 U.S.C. § 112 regarding the recitation of a temperature range of “100 °F or lower”. Applicants respectfully traverse in view of the above. However claims 50 and 51 have been amended rendering this rejection moot.

Claims 50 and 51 stand rejected under 35 U.S.C. § 112 regarding the recitation of a pressure range. Applicants respectfully traverse. The specification discloses system pressures throughout which are greater than 450 psi. For example, but not limited to, 625 psi (e.g., page 8, line 17), 635 psi (e.g., page 8, line 17) and 670 psi (e.g., page 14, line

17). Further, Applicants respectfully assert, the specification discloses a high pressure steam system at 1500 psi which one of ordinary skill in the art would understand can impact upwardly the pressures seen by and designed for in the process system including a reactor.

Claims 50 and 51 stand rejected under 35 U.S.C. § 112 regarding the recitation of a temperature range of “1500 °F or lower”. Applicants respectfully traverse in view of the above. However claims 50 and 51 have been amended rendering this rejection moot.

Antecedent Basis

Claims 23 and 34 each stand rejected under 35 U.S.C. 112, second paragraph as allegedly lacking antecedent basis regarding a number of terms. Applicants respectfully traverse. However, both claims 23 and 34 have been amended rendering these rejections moot.

“adapted to”

Claims 50 and 51 stand rejected for their recitation of the phrase “adapted to”. Applicants traverse the legal characterization of this phrase. However, in order to advance the prosecution of this application, claims 50 and 51 have been amended rendering this rejection moot.

Response To Claim Rejections Under 35 USC 102

Claims 34, 35, 38, 40, 46, 47, 51 and 53 stand rejected under 35 U.S.C. 102(b) as being anticipated by Weil et al. (US 3,891,403; “Weil ‘403”). Claims 34, 35, 38, 40, 41, 43, 45-47 and 51 stand rejected under 35 U.S.C. 102(b) as being anticipated by Schora et

at. (US 4,560,547; “Schora ‘547”). Claims 23, 24, 29-31, 34, 35, 38-40, 45-47 and 50-54 stand rejected under 35 U.S.C. 102(b) as being anticipated by Tassoney et al. (US 3,715,301; “Tassoney ‘301”).

Applicants respectfully traverse.

As discussed above, independent claims 23 and 34 have each been amended rendering the claim rejections set forth above moot. Amended claims 23 and 34 recite “said reactor having an outlet of a continuous stream of an off gas comprising 0.30 vol % or less CO”. Applicants respectfully assert none of the documents cited in the office action disclose this claimed element of Applicants’ invention.

Accordingly, Applicants respectfully assert none of the cited documents disclose all of the elements of the claimed invention either expressly, or inherently, and the requirements for anticipation under 35 U.S.C. § 102 are not met. Thus, Applicants request the withdrawal of all rejections under 35 U.S.C. § 102.

Response To Claim Rejections Under 35 USC 103

Claims 25, 26, 41 and 42 stand rejected under 35 U.S.C. 103(a) as being over Tassoney ‘301 in view of Stratford (US 3,118,746; “Stratford ‘746”). Claims 27 and 43 stand rejected under 35 U.S.C. 103(a) over Tassoney ‘301 in view of Kalbach ‘982 (US 2,639,982; “Kalbach ‘982”). Claims 28, 32, 33, 44, 48 and 49 are rejected under 35 U.S.C. 103(a) over Tassoney ‘301 in view of Schlinger et al. (US 3,224,954; “Schlinger ‘954”). Claims 36 and 37 are rejected under 35 U.S.C. 103(a) over Tassoney ‘301 in view of Graf (US 3,915,395; “Graf ‘395”).

As discussed above, independent claims 23 and 34 have each been amended rendering the claim rejections set forth above moot. Amended claims 23 and 34 recite

“said reactor having an outlet of a continuous stream of an off gas comprising 0.30 vol % or less CO” which element Applicants assert is not disclosed in any of the cited documents and render the rejections moot.

Thus, Applicants assert none of the secondary references respectively Stratford ‘746, Kalbach ‘982, Schlinger ‘954 and Graf ‘395 rectify the deficiencies of Tassoney ‘301. In view of the above, Applicants respectfully assert that none of the cited documents whether considered alone, or in combination, teach or suggest all claimed elements of Applicants’ claimed invention. Accordingly, Applicants respectfully request the withdrawal of all rejections under 35 U.S.C. 103(a).

SUPPLEMENTAL REMARKS

In view of the number of references, and for the convenience of the Examiner, Applicants provide the following supplemental remarks in addition to those above.

Applicants respectfully assert that the cited documents of Weil ‘403, Stratford ‘746, Schlinger ‘954 and Kalbach ‘982 do not disclose fluidized beds as previously claimed by Applicants prior to amendment herein. Additionally, Applicants note that Schora ‘547 utilizes steam as the fluidizing medium and thus does not anticipate or make obvious Applicants’ previously claimed invention. Further, as disclosed in Stratford ‘746 and Schlinger ‘954, Applicants note that a downward settling bed as disclosed by Stratford ‘746 is not a fluidized bed as claimed by Applicants.

Applicants separately note Schlinger ‘954 discloses a fixed catalyst bed and does not anticipate or make obvious Applicants’ previously claimed fluidized bed “free of a contained catalyst bed”.

In view of the above traverse and supplemental remarks Applicants respectfully assert none of the cited references disclose all claimed elements of Applicants’ claimed

invention either expressly or inherently and no case of anticipation exists for any of claims 23-54. Further, none of the cited references, whether considered separately or in combination teach or suggest Applicants' claimed invention and no *prima facie* case of obviousness exists for any of claims 23-54. Accordingly Applicants request the withdrawal of all rejections under 35 U.S.C. § 102 and 35 U.S.C. § 103 and the allowance of this Application.

CONCLUSION

Based on the foregoing amendments and remarks, Applicants respectfully assert that all current rejections be withdrawn and assert that all pending claims are allowable and request reconsideration and the allowance of this application.

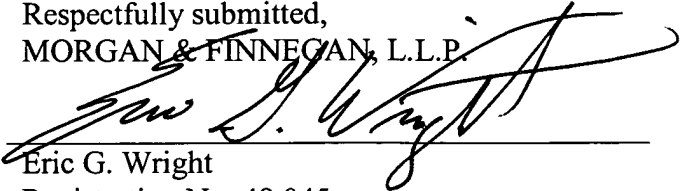
AUTHORIZATION

The Commissioner is hereby authorized to charge any additional fees which may be required for the timely consideration of this amendment, or credit any overpayment, to Deposit Account No. 13-4500, Order No. 3495-7000US3. A DUPLICATE COPY OF THIS SHEET IS ATTACHED.

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By:

Respectfully submitted,
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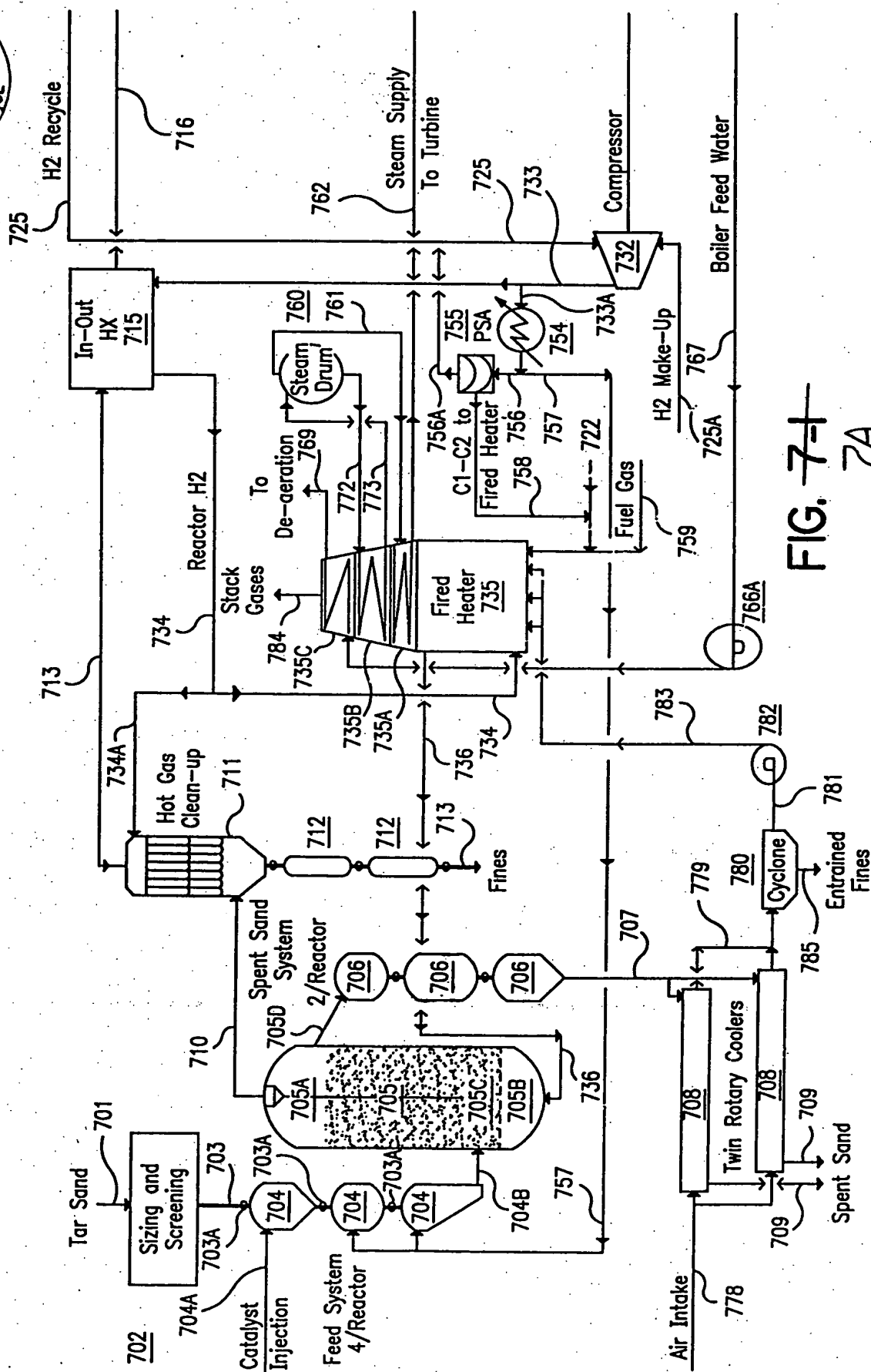


FIG. 7-1A

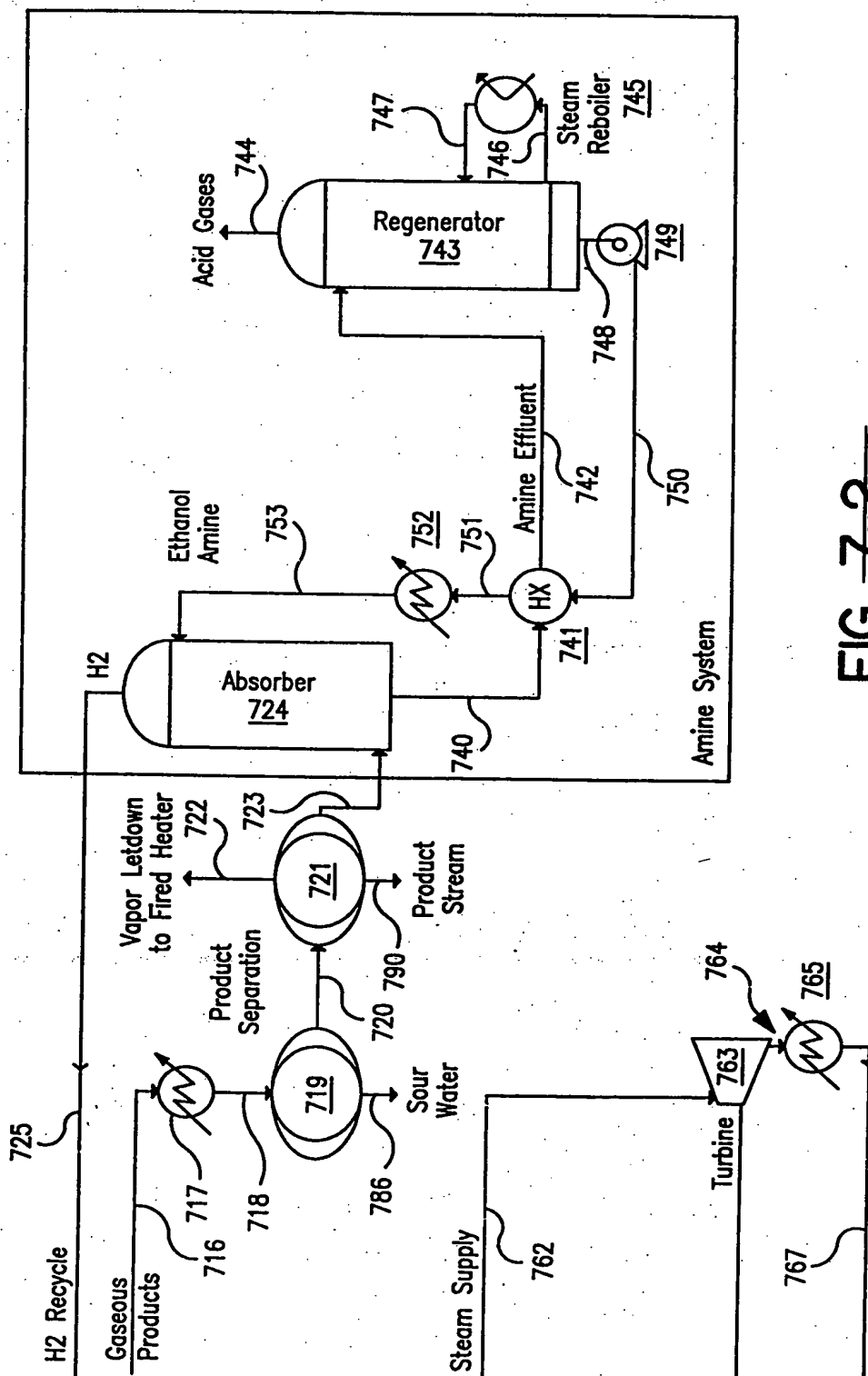


FIG. 7-2